

### **REMARKS**

The Official Action rejects Claims 1-7, 9-16 and 25-31 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In this regard, the Official Action has identified several recitations of Claims 1, 9 and 25-30 that were added by amendment in response to the prior Official Action and has asserted that these recitations were not adequately disclosed by the present application. Although not agreeing with the substance of the rejection, Claim 9 and its dependent claims, that is, Claims 10-16, 27 and 28, have been cancelled, thereby mooting the rejection of these claims. As to the remaining claims, however, Applicants submit that the present application, as originally filed, does provide an adequate written description of the claimed invention including those recitations specifically noted by the Official Action. As such, the rejection of Claims 1-7, 25, 26 and 29-31 is thereby traversed. Since this Amendment does not raise any new issues, Applicants respectfully request reconsideration of the present application and allowance of the remaining claims in light of the following remarks.

The Official Action rejects Claim 1 for failing to describe the damage tolerant shaft as having "an elongate annular body". In contrast to this position, however, Figures 1 and 2 of the present application depict a damage tolerant shaft having an elongate annular body. In this regard, Figures 1 and 2 illustrate annular bodies 16, 26 that extend lengthwise between opposed ends of the shaft. The description of the relationship of the annular body with other elements also demonstrates that the annular body extends in a lengthwise direction and is therefore elongate. In this regard, the annular body is described to be symmetrical about an axis that extends lengthwise therethrough. See page 6, lines 30-32. Further, the annular body and the ribs are described to cooperate to define voids 12, 22 that extend lengthwise between the annular body and the ribs. See page 7, lines 3-4. For each of the foregoing reasons, Applicants respectfully submit that the present application, as originally filed, does describe an elongate annular body as recited by independent Claim 1.

The Official Action also rejects Claim 1 for an alleged failure of the present application to describe a second set of interstices as mentioned in line 8 of Claim 1 in addition to those mentioned in line 6 of Claim 1 and for further allegedly failing to describe the interstices set

forth in line 8 of Claim 1 as being elongate. Initially, Applicants note that the interstices recited on lines 6 and 8 of Claim 1 are the same interstices and are not two separate sets of interstices. Not only is there nothing in specification or in Claim 1 that would imply to one of skill in the art that first and second sets of interstices are defined, but the specification only describes and the drawings only illustrate a single set of interstices between the annular body and the ribs and a reading of Claim 1 reinforces the understanding that the interstices set forth on lines 6 and 8 are the same. In this regard, filler material is described to be disposed within the interstices defined between the annular body and the plurality of ribs on lines 6 and 7. Moreover, the recitation on lines 8-10 of Claim 1 further describes the interstices defined by the annular body and the plurality of ribs to be elongate so as to extend lengthwise through the shaft such that filler material also extends lengthwise through the shaft. With reference to the language Claim 1, therefore, "said filler material" with which the elongate interstices of line 8 are filled references back to and is the same as the filler material that fills the interstices of line 6. Thus, Applicants submit that independent Claim 1 does not recite first and second sets of interstices as suggested by the final Official Action and, instead, merely recites interstices defined between the annular body and the plurality of ribs.

The present application, as originally filed, is also submitted to adequately describe the elongate nature of the interstices. In this regard, the interstices are defined between the annular body 16, 26 and the ribs 14, 24. As shown in Figures 1 and 2, and as described above in conjunction with the annular body, both the annular body and the ribs extend in a lengthwise direction. In this regard, the annular body is shown to extend lengthwise between the opposed ends of the damage tolerant shaft in Figures 1 and 2, and the ribs are likewise shown to extend through the annular body in a lengthwise direction in Figures 1 and 2. For example, the perspective lines that extend rearwardly from the closest end of the shaft toward the furthest end of the shaft depict the elongate nature of the ribs. Since both the annular body and the rib extend in a lengthwise direction, the intersections of the ribs and the annular body also extend in a lengthwise direction, as similarly shown by the rearwardly extending perspective lines in Figures 1 and 2. Since the interstices are described by the present application to be defined between the annular body and the ribs at the intersections thereof, one of skill in the art would also

understand that the interstices extend along the intersections between the ribs and the annular body, thereby resulting in interstices that are elongate. Applicants therefore submit that the present application, as originally filed, does adequately describe the elongate interstices of Claim 1.

With respect to independent Claim 1, the Official Action also asserts that the present application does not describe the filler material extending lengthwise through the shaft. As described on page 8, lines 3-7 of the present application, a filler material fills the interstices between the annular body and the ribs. Since the interstices extend in a lengthwise direction as described above, the filler material also necessarily extends lengthwise through the shaft since a failure to do so would not effectively fill the interstices as described by the present application and recited by independent Claim 1. Thus, the present application, as originally filed, also adequately discloses the recitation of Claim 1 that the filler material extends lengthwise through the shaft.

The Official Action also rejects the recitations of Claim 25 that the annular body and the plurality of ribs comprise a plurality of layered plies that comprise a composite material with each ply extending along and defining a portion of at least two ribs and an arcuate section of the annular body. As described on page 9, line 4-7 and 17-19, the outer layer and the lobes may be fabricated from unidirectional plies of a composite material having reinforcing fibers with the plies formed so that the fibers extend partially about the lobes. As shown in Figure 3, for example, a plurality of plies encircle and form each lobe, and a separate plurality of plies encircle all of the lobes to form the outer layer. In this regard, four plies are shown to encircle and form each lobe and four additional plies are shown to encircle all of the lobes to form the outer layer. See, for example, the relatively thin layers that are not cross-hatched in Figure 3. Thus, as shown in Figure 3, a plurality of plies encircle and form each lobe with each ply defining a portion of two ribs as well as an arcuate section, such as about a quarter or 90°, of the annular body. Thus, the present application, as originally filed, does describe a plurality of ribs formed of a plurality of layered plies of composite material with each ply extending along and defining a portion of at least two ribs and an arcuate section of the annular body. Moreover, the present application also describes the annular body to further include a second plurality of layered plies

of composite material that extends circumferentially about the lobes. Thus, the rejection of Claims 25 and 26 is therefor overcome.

Likewise, the Official Action objects to the recitation of independent Claim 29 that each ply extends along and defines a portion of at least two ribs and an arcuate section of the annular body. As described above, the present application, as originally filed, and Figure 3, in particular, describes each ply extending along and defining a portion of at least two ribs and an arcuate section of the annular body. Thus, the rejection of independent Claim 29 is therefor overcome for the reasons described above. Further, the recitation that the annular body further includes a second plurality of layered plies of composite material that extends circumferentially about the lobes as set forth by Claim 30 is also described by the present application, as originally filed, and, in particular, by Figure 3 as described above in conjunction with dependent Claim 26. Thus, the rejection of dependent Claim 30 is also overcome.

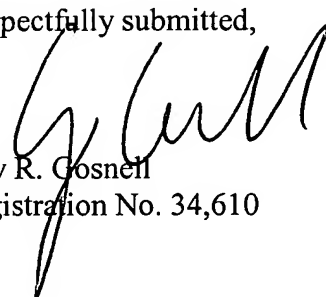
For each of the reasons described above, the claims are adequately described by the present application, as originally filed. Thus, the rejection of the claims under 35 U.S.C. § 112, first paragraph, is therefor overcome.

#### CONCLUSION

In view of the remarks presented above, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

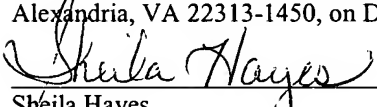
Respectfully submitted,

  
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